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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/922,815 | 08/06/2001 | Christopher A. Michaluk | 98048CON(3600-090-02) | 9155 |

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EXAMINER

OLTMANS, ANDREW L

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1742

DATE MAILED: 06/03/2002

4

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-4

Office Action Summary

Application No.

09/922,815

Applicant(s)

MICHALUK ET AL.

Examiner

Andrew L Oltmans

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43,63-66 and 78-119 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-43,63-66 and 78-119 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 1742

DETAILED ACTION

Claim Objections

1. Applicant is advised that should claim 65 be found allowable, claim 82 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). Both the claims claim a tantalum metal at least 99.995% pure, having an average grain size of 25-100 microns.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Douglass et al. 3,497,402

3. Claims 1-18, 22-43, 63-66, 78-94, 96-116, 118-119 are rejected under 35 U.S.C. 103(a) as being unpatentable over Douglass et al. 3,497,402 (Douglass; cited on IDS filed August 6, 2001).

Douglass teaches a method of producing a cold worked annealed tantalum alloy consisting of in excess of pure tantalum 10-1000 ppm of yttrium (abstract; claim 1). Douglass teaches that the tantalum stock is forged, annealed in a vacuum, rolled, and annealed (col 2, lines

Art Unit: 1742

20-26) to produce a substantially complete recrystallization (i.e. resulting in a fully recrystallized structure) of the tantalum (col 1, line 65). The ASTM grain size appears to overlap the grain size of the instant invention in that the ASTM grain size produced is greater than 3. Douglass teaches that the tantalum alloy of his invention has improved drawing characteristics (col 1, line 23-24) and fine grain size (col 2, lines 2-3).

Douglass fails to meet all the limitations of the instant claims in that Douglass does not explicitly teach the exact compositional or grain size ranges, the center peak intensity, the sputtering target, or the resistive film layer.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the alloy taught by the reference has a composition (i.e. pure tantalum with only 10 to 1000 ppm Y) and grain size (i.e. greater than ASTM grain size greater than 3), which overlaps that of the instant claims, *In re Malagari*, 182 USPQ 549, and MPEP 2144.05.

With respect to the center peak intensity, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the composition taught by the reference and the method of producing the composition (i.e. forged, annealed in a vacuum, rolled, and annealed (Douglass: col 2, lines 20-26) to produce a substantially complete recrystallization (i.e. resulting in a fully recrystallized structure) of the tantalum (Douglas: col 1, line 65)) overlap or are the same as the alloy composition and the method of producing the composition recited in the claims and therefore one of ordinary skill in the art would expect that the products taught by the references would be the same as applicant's claimed product, including the center peak intensity values.

Art Unit: 1742

“Where the claimed and prior art products are identical or substantially identical in structure or composition or are produced by identical or substantially identical processes, a prima facie case of either anticipation of obviousness has been established, *In re Best* 195 USPQ 430, 433 (CCPA 1977). ‘When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.’ *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best* 195 USPQ 430, 433 (CCPA 1977).” see MPEP 2112.01.

With respect to the sputtering target, and the resistive film layer, these limitations have not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). In the instant case, no structure for either the sputtering target or the resistive film has been recited. In view of this lack of claimed structure, these limitations, as explained above, have not been accorded any patentable weight.

Douglass et al. 3,497,402 in view of Applicant's Admitted Known Prior Art

4. Claims 19-21, 95 and 117 are rejected under 35 U.S.C. 103(a) as being unpatentable over Douglass et al. 3,497,402 (Douglass; cited on IDS filed August 6, 2001) in view of Applicant's Admitted Known Prior Art.

Douglass et al. is taught and is applied as above in paragraph 10.

Douglass fails to meet all the limitations of the instant claims in that Douglass does not explicitly teach the capacitor can.

Applicant admits on page 3 of the specification starting on line 6:

“Qualities such as fine grain size can be an important property for sputtering targets made from tantalum since fine grain size can lead to improved uniformity of thickness of the sputtered deposited film. Further, other products containing the tantalum having fine grain size can lead to improved homogeneity of deformation and enhancement of deep drawing and stretchability,

Art Unit: 1742

which are beneficial in making **capacitors cans**, laboratory crucibles, and increasing the lethality of explosively formed penetrators (EFP's)."[Emphasis added]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the metal of Douglass to make a capacitor can because, as admitted by the applicant, it is desirable to use tantalum metals like those taught in Douglass, which have enhanced drawing and fine grain structure.

Shah et al. 6,348,139 B1

5. Claims 1-18, 22-43, 63-66, 78-94, 96-116, 118-119 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shah et al. 6,348,139 B1 (Shah).

Shah teaches tantalum metal and tantalum metal sputtering targets, useful for electronics and semiconductor industries (col 1, line 8) having an impurity level and grain size that overlap the impurity level and grain size instantly claimed (col 6):

The following illustrates one embodiment of the process to obtain tantalum (a 99.95 or higher purity) target blank with a maximum grain size less than 50 microns and a
35 uniform crystallographic texture of {100} across the face and through the thickness of the target.

Shah further teaches that the structure is fully recrystallized to form a fine and uniform structure/texture (col 1, line 37; col 3, lines 20-22; col 4, lines 41-42 and 49-54).

Shah fails to meet all the limitations of the instant claims in that Shah does not explicitly teach the exact compositional or grain size ranges, the center peak intensity, or the resistive film layer.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the alloy taught by the reference has a

Art Unit: 1742

composition (i.e. purity greater than 99.95%) and grain size (i.e. less than 50 microns), which overlaps that of the instant claims, *In re Malagari*, 182 USPQ 549, and MPEP 2144.05.

With respect to the center peak intensity, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the composition taught by the reference and the method of producing the composition (i.e. forged, rolled, and annealed in a vacuum (Shah: col 1, lines 23-37; col 5, line 60 to col 6, line 31) to produce a substantially complete recrystallization (i.e. resulting in a fully recrystallized structure) of the tantalum (Shah: col 1, line 37; col 3, lines 20-22; col 4, lines 41-42 and 49-54)) overlap or are the same as the alloy composition and the method of producing the composition recited in the claims and therefore one of ordinary skill in the art would expect that the products taught by the references would be the same as applicant's claimed product, including the center peak intensity values.

"Where the claimed and prior art products are identical or substantially identical in structure or composition or are produced by identical or substantially identical processes, a prima facie case of either anticipation of obviousness has been established, *In re Best* 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best* 195 USPQ 430, 433 (CCPA 1977)." see MPEP 2112.01.

With respect to the resistive film layer, this limitation has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). In the instant case, no structure for the resistive film has been recited. In

Art Unit: 1742

view of this lack of claimed structure, this limitation, as explained above, has not been accorded any patentable weight.

Shah et al. 6,348,139 B1 in view of Applicant's Admitted Known Prior Art

6. Claims 19-21, 95 and 117 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shah et al. 6,348,139 B1 (Shah) in view of Applicant's Admitted Known Prior Art.

Shah teaches as set forth above as in paragraph 5.

Shah fails to meet all the limitations of the instant claims in that Shah does not explicitly teach the capacitor can.

Applicant admits on page 3 of the specification starting on line 6:

"Qualities such as fine grain size can be an important property for sputtering targets made from tantalum since fine grain size can lead to improved uniformity of thickness of the sputtered deposited film. Further, other products containing the tantalum having fine grain size can lead to improved homogeneity of deformation and enhancement of deep drawing and stretchability, which are beneficial in making **capacitors cans**, laboratory crucibles, and increasing the lethality of explosively formed penetrators (EFP's)."[Emphasis added]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the metal of Shah to make a capacitor can because, as admitted by the applicant, it is desirable to use tantalum metals like those taught in Shah, which have a fine grain structure, uniform structure/texture and are useful for electronic and semiconductor devices.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 1742

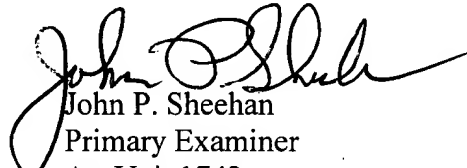
- a. Bernard U.S. Patent No. 3,925,187 teaches that sputtering targets for forming thin layers of tantalum is made of high purity tantalum having a purity of 99.999% (col 2, lines 44-45).
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew L. Oltmans whose telephone number is 703-308-2594. The examiner can normally be reached 8:30-5:00 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-873-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


ALO

May 30, 2002


John P. Sheehan
Primary Examiner
Art Unit 1742